

AF/1700

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Jerold S. Horn et al.

Art Unit : 1713

Serial No. : 09/262,628

Examiner : Zitomer, F.

Filed : March 4, 1999

Title : FLUOROPOLYMERIC ORTHODONTIC ARTICLE

BOX AF

Commissioner for Patents

Washington, D.C. 20231

RESPONSE

#12
2/4/02

In response to the action mailed October 5, 2001, applicants submit the following remarks.

Claims 1-4, 7-8, 10, and 12-23 are pending and stand rejected on various grounds. We turn first to the rejections relating to claims 17-19.

Claims 17-19 stand rejected under 35 U.S.C. 102(b) as being anticipated by Hammar et al., U.S. 5,461,133. Claims 17-19 feature a Markush group containing seven specific fluoroplastics:

- (1) perfluoroethylene-propylene copolymer;
- (2) perfluoroalkoxyethylene;
- (3) ethylene-tetrafluoroethylene copolymer;
- (4) polyvinylidene fluoride;
- (5) polyvinylfluoride;
- (6) polychlorotrifluoroethylene;
- (7) ethylene-chlorotrifluoroethylene copolymer.

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In our previous response, we demonstrated that this rejection should be withdrawn because Hammar, on its face, does not describe **any** of these polymers. The **only** fluorocarbon polymers that Hammar describes are the following three fluoroelastomers (col. 5, lines 58-67):

- (1) poly(vinylidene fluoride-co-hexafluoropropylene);
- (2) poly(vinylidene fluoride-co-hexafluoropropene-co-tetrafluoroethylene);
- (3) poly(vinylidene fluoride-co-hexafluoropropylene-co tetrafluoroethylene) plus cure site monomer.

Putting aside, for the moment, the fact that the claims require fluoroplastics, whereas Hammar describes fluoroelastomers, a simple comparison of the two lists reveals that Hammar's list does not include **any** of the polymers set forth in the claims. Indeed, the Examiner has yet to offer proof to the contrary. In the latest Office Action, the Examiner simply repeats his earlier statement that "Hammar teaches orthodontic articles comprising the present fluoropolymers as stated above," without adding anything more. This statement is wrong. The rejections cannot stand and should be withdrawn.

Turning to the remaining rejections, claims 1-4, 7-8, 10, and 12-23 stand rejected under 35 U.S.C. §112, first paragraph, on the ground that neither the claims nor the remainder of the application includes a definition of the term "fluoroplastic." It is black letter law that an applicant need not define terms that have a well-recognized meaning in the art. That is the case here, as demonstrated by the excerpt from the Polymer Technology Dictionary that the Examiner provided. Based upon the Examiner's statements at pages 4-5 of the Office Action, the Examiner acknowledges that the Polymer Technology Dictionary is an authoritative text in the field of polymer science and engineering. The definition of "fluoropolymer" at page 161 of the Polymer Technology Dictionary conclusively establishes that the term "fluoropolymer" is a genus that includes two distinct species: fluoroplastics and fluororubbers (i.e., fluoroelastomers). The definitions of "fluoroplastic" and "fluororubber" found at page 161 underscore the fact that they represent two different classes of fluoropolymers. One is a plastic, while the other is a rubber. Plastics and rubbers, as is well known, have different chemical and physical properties. Indeed, if fluoroplastics and fluororubbers were one and the same, why would an authoritative text such as the Polymer Technology Dictionary bother to distinguish between the two of them?

The very text upon which the Examiner relies proves that in the field of polymer science and engineering, it was well known that fluoroplastics were a distinct class of fluoropolymer having recognized properties. It was also well-known that fluoroplastics were different from fluororubbers or fluoroelastomers. Accordingly, there was no need for applicants to provide a specific definition of the term "fluoroplastic" in the application. The rejection, therefore, should be withdrawn.

The excerpt from the Polymer Technology Dictionary that the Examiner provided and upon which he relies further establishes that the remaining rejection of these claims for lack of enablement cannot stand. This rejection is premised upon the Examiner's mistaken belief that the claims "read on any orthodontic article containing any amount of any fluoropolymer." As the Polymer Technology Dictionary proves, they most certainly do not. The claims only cover a specific class of fluoropolymer, i.e., fluoroplastics. Thus, they exclude fluoroelastomers. The Examiner has never contested applicants' statement that the disclosure provides ample disclosure, by way of lists of suitable fluoroplastics, identification of commercial sources of these fluoroplastics, test procedures to assist in the selection of appropriate fluoroplastics, and numerous working examples describing how fluoroplastics were selected, prepared, and tested, to support the breadth of the present claims. Accordingly, these rejections should be withdrawn as well.

Finally, claims 1-4, 7-8, 10, and 12-23 stand rejected under 35 U.S.C. §103 over Hammar in view of Pustka, U.S. 4,323,956. As in the case of the rejections based upon §112, these rejections are premised upon the Examiner's mistaken belief that the terms "fluoropolymer," "fluoroplastic," and "fluoroelastomer" are somehow interchangeable and describe the same polymers. The very excerpt from the Polymer Technology Dictionary upon which he relies conclusively establishes that this is not the case. The claims require fluoroplastics, while Hammar expressly describes fluoroelastomers (see col. 5, lines 58-67).¹ They are different and everyone in the art recognizes they are different, including the authoritative text offered by the

¹ At page 5 of the Office Action, the Examiner states: "assuming arguendo that the present articles are distinguished by the term "fluoroplastic" nothing on this record shows that the present polymers and those of the references are different." We do not understand this statement. The Hammar reference explicitly states that the polymers are fluoroelastomers. That alone rebuts the Examiner's position.

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Examiner. Accordingly, because Hammar describes fluoroelastomers and does not describe fluoroplastics, Hammar cannot support the obviousness rejection and it should be withdrawn.

Applicants ask that all claims be allowed. Please apply any charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

Date: 1/7/02


Dorothy P. Whelan
Reg. No. 33,814

Fish & Richardson P.C., P.A.
60 South Sixth Street
Suite 3300
Minneapolis, MN 55402
Telephone: (612) 335-5070
Facsimile: (612) 288-9696